

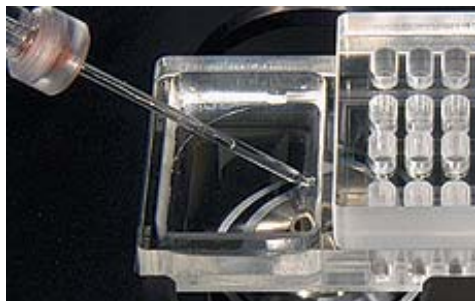
## Drug Discovery the Microfluidic's Way

**Thanks to their unique microfluidic concept the biotechnology tools company Cellecricon has developed the first high-throughput tool for ion channel drug screening. Their first product the Dynaflo™ Microchip is a ground-breaking drug screening device where drug discovery can be performed with high speed and high accuracy. Cellecricon is committed to inventing new methodologies combining microtechnology and biology that will allow aggressive productivity increases along bottlenecks experienced by pharmaceutical and biotechnology companies.**

- The Dynaflo™ Microchip has substantially increased our throughput and reduced the amount of compound needed for testing. The Dynaflo™ technology is superior in most aspects when compared to other perfusion systems on the market, says Olof Larsson, Professor, AstraZeneca R&D Södertälje, Sweden.

### The magics of microfluidics

The Dynaflo™ chip is a revolutionizing higher-throughput tool for ion channel drug screening and can be described as a chemical bar code generator where each bar contains a different drug. The bars are created at the interface between parallel microchannel outlets loaded with drugs and an open volume reservoir. Due to the unique laminar property of fluids at short characteristic length scales, there is essentially no mixing between the different drug solutions as they enter the open volume. Thus, virtual microcontainers of different drug solutions are created in an open volume that can be accessed by a biological cell detector only a few microns large. The cell is used to signal the presence and function of drugs in each bar and is rapidly scanned across the channel outlets using a computer-controlled scan stage.



*Sequential screening of ion channel drug candidates using conventional patch clamp and the Dynaflo™ microchip.*



*A close-up of the patch-clamped cell and the laminar flow zones at the microchannel outlets.*



### **High-speed analysis in high-tech disposables**

Because the chips are made in the same way as microelectronic chips in computers, very large arrays of channels can be efficiently created in compact and small-scale chip devices. Since the cell can be scanned rapidly across a multitude of channel outlets the result is a high-speed, high-throughput discovery platform for drugs acting on ion channels. Furthermore, the chips are made in polymeric materials and are for single use-that is a high-tech disposable product. The first version of the Dynaflow™ microchip, launched spring 2003, will screen more than 1000 compounds per day.

### **About Cellectricon**

Cellectricon is a Swedish biotechnology tools company that develops microfabricated cell-based tools for the pharmaceutical and biotechnology industries. Cellectricon works at the microtechnology and biology interface inventing products that will allow productivity increases primarily in the drug discovery process. The company was formed based on an extensive and solid patent portfolio within different areas such as high-throughput electrophysiology, patch-clamp, microfluidics, microfabrication, and electroporation. Cellectricon is currently owned by Investor Growth Capital, Innovationskapital, Karolinska Investment Fund together employees and seed investors. For more information please visit [www.cellectricon.se](http://www.cellectricon.se).

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